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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,095	06/13/2001	Atsushi Oohashi	Q64715	4102

7590 06/20/2002

SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

EXAMINER

MULLINS, BURTON S

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 06/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/879,095

Applicant(s)

OOHASHI ET AL.

Examiner

Burton S. Mullins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. Figures 12-18 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1 and 5-6 are objected to because of the following informalities: In claim 1, change “inner wall surfaces” to ---inner wall surface---. In claims 5&6, change “at around” to either --at-- or --around---. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. Claims 13-14 and 19-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 13-14 are vague and indefinite. The functional language “caused at a time of inserting...” is not clear. Does this mean the segments are broken? In claim 19, “coating at least inner wall surfaces...from axial direction of the stator iron core...” makes no sense. In claim 20, the verb “provided” is vague and indefinite. Should this be ---applied--- or ---coated--- or some similar definite verb?

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3, 13, 15, 17 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imori et al. (JP 1-278242) in view of Jordan et al. (US 3,646,374). Imori teaches an a.c. generator for a vehicle comprising: a rotator (rotor R; Fig.10); a stator iron core 10, arranged opposite an outer periphery of the rotator R and having a plurality of slots 12 (Fig.1); and a stator S including a plurality of conductor segments 20 (Figs.8-11), which are accommodated in the slots to form a stator winding, wherein the stator iron core is insulated from the conductor segments by coating inner wall surfaces of the slots with an insulative resin layer 13. Imori does not teach coating the end surfaces of the core.

Jordan teaches a resin coating 17 for a stator core 10 wherein both the slot walls and side faces 12 of the ends of the core are electrostatically coated to insulate the core from the windings to prevent short circuiting (c.2, lines 8-13).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Imori and provide a resin coating on the end surfaces of the core per Jordan since it would have been desirable to insulate the core from the windings to prevent short circuiting.

Regarding claim 3, Jordan notes that the sharp slot edges may be embossed (c.1, lines 55-56).

Regarding the functional limitation of claim 13, the resin layer of Imori and Jordan would inherently fulfill the limitations of the claim. Jordan, in particular, implies that his resin does not develop cracks as in the prior art (c.1, lines 40-48) and states that his resin exhibits good thermal resistance and other physical properties (c.6, line 74-c.7, line 13).

Regarding claim 15, the resin in Jordan may comprise silicon dioxide (Example 3).

Regarding claim 17, the resin in Imori comprises epoxy.

Regarding manufacturing claims 19-20, Jordan teaches that the resin comprising powders (e.g., c.4, lines 17-18) is electrostatically coated (c.7, lines 9-12).

7. Claims 2, 4-6, 14, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imori and Jordan as applied to claim 1 above, and further in view of Ogami et al. (JP 56-3557). Imori and Jordan do not teach a rounded shape or a chamfered shape to the resin around opening edges of the slots (claim 2) or that the resin is thicker at the slot edges than in the center portion of the slots (claims 5&6).

Ogami teaches resin 6 impregnated on the roots of stator winding end portions 3/9 (Figs.1-2) which has a rounded shape and is thicker than resin in the center portion of the slots. The resin prevents outflow of impregnating varnish and obtains a strong insulating layer (abstract).

It would have been obvious to one having ordinary skill in the art to modify Imori and Jordan and provide a rounded shape resin section at the opening edges of the slot sides per Ogami for the purpose of strengthening the insulating layer.

Regarding claim 4, Jordan notes that the sharp slot edges may be embossed (c.1, lines 55-56).

Regarding the functional limitation of claim 14, the resin layer of Imori and Jordan would inherently fulfill the limitations of the claim. Jordan, in particular, implies that his resin does not develop cracks as in the prior art (c.1, lines 40-48) and states that his resin exhibits good thermal resistance and other physical properties (c.6, line 74-c.7, line 13).

Regarding claim 16, the resin in Jordan may comprise silicon dioxide (Example 3).

Regarding claim 18, the resin in Imori comprises epoxy.

8. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imori and Jordan or Imori, Jordan and Ogami as applied to respective claims 1 and 2 above, and further in view of Perfetti et al. (US 2,407,935). The conductor cross-sections in Imori, Jordan and Ogami are not rectangular, per se. Perfetti teaches a generator with stator conductors comprising bars 16a/17b (Figs.1&3) with rectangular cross-section (Fig.2). The bars have bent and straight ends which allow for easy connection and manufacture (c.3, lines 23-58).

It would have been obvious to modify Imori and Jordan, or Imori, Jordan and Ogami, and provide bars for the alternator conductors per Perfetti since this would have been desirable for easy connection and manufacture of the alternator windings.

9. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imori and Jordan or Imori, Jordan and Ogami as applied to respective claims 1 and 2 above, and further in view of Adachi (JP 2-136047). The surfaces of the core in Imori, Jordan and Ogami are not uneven, per se. Adachi teaches a method for preventing peeling of insulation resin applied to laminations whereby "irregular" (uneven) surfaces are formed on the sheets in the slots (Fig.3)

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before application of resin layer 6. Since the resin layer 6 also covers the end surfaces of the core, one would also be lead to roughen the end surfaces as well.

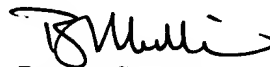
It would have been obvious to modify Imori and Jordan, or Imori, Jordan and Ogami, and provide uneven surfaces on the core per Adachi since this would have been desirable to prevent peeling of the resin insulation.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 305-7063. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 305-1341 for regular communications and 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.


Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm
June 18, 2002